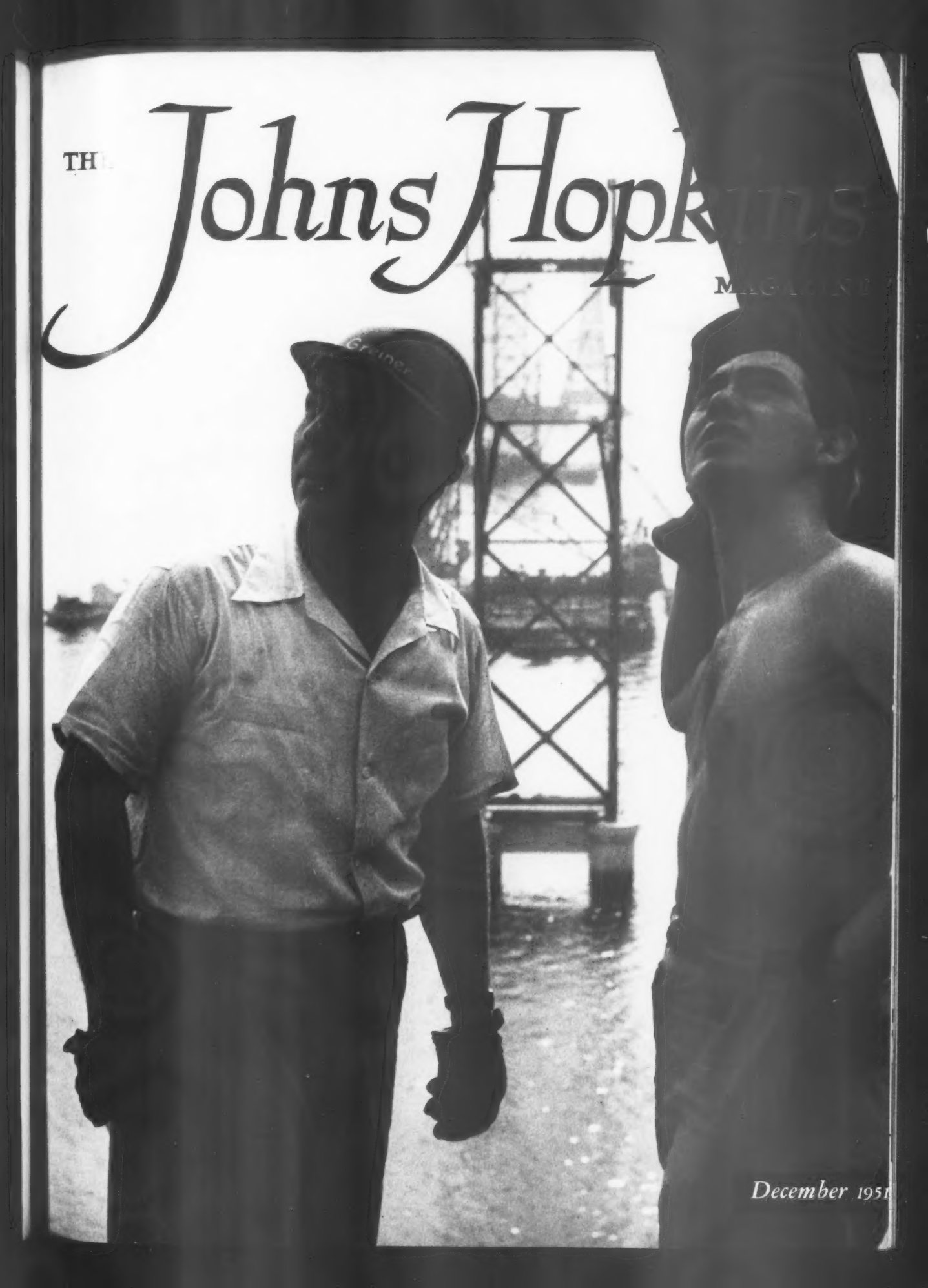
THE
Johns Hopkins
MAGAZINE
December 1951

Medal of Honor

Sergeant Travis Watkins,
Gladewater, Tex.—Medal of Honor

Private First Class Melvin Brown,
Mahaffey, Pa.—Medal of Honor

Lieutenant Frederick Henry,
Clinton, Okla.—Medal of Honor

Major General William F. Dean,
Berkeley, Calif.—Medal of Honor

Sergeant Charles Turner,
Boston, Mass.—Medal of Honor

This is the season when you think of stars. The one over Bethlehem. The ones on Christmas trees.

But this year remember another star, too—the one on the Medal of Honor. And make a place in your heart for the brave, good men who've won it. Men who, oftener than not, made the final, greatest sacrifice—so that the stars on your Christmas tree, and the stars in your country's flag, might forever shine undimmed.

Right now—today—is the time to do something important for these men who died for you. You can, by helping to defend the country they defended so far "above and beyond the call of duty."

One of the best ways you can make defense *your* job, too, is to buy more . . . and more . . . and more United States Defense Bonds. For your bonds help strengthen America. And if you make this nation strong enough you'll create, and keep, the peace for which men died.

Buy Defense Bonds through the Payroll Savings Plan where you work or the Bond-A-Month Plan where you bank. Start today!

Peace is for the strong...Buy U. S. Defense Bonds

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THE Johns Hopkins MAGAZINE

VOLUME III December, 1951 NUMBER 3

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The Cover

G. Joseph Hudert, at left on cover, received his B.E. from Johns Hopkins in 1931. Today he is assistant resident engineer on the mighty Chesapeake Bay Bridge project. A story of the bridge, as seen by him and Bruce A. Herman (Hopkins B.E. '33), begins on Page 5.

Photo by Robert M. Mottar

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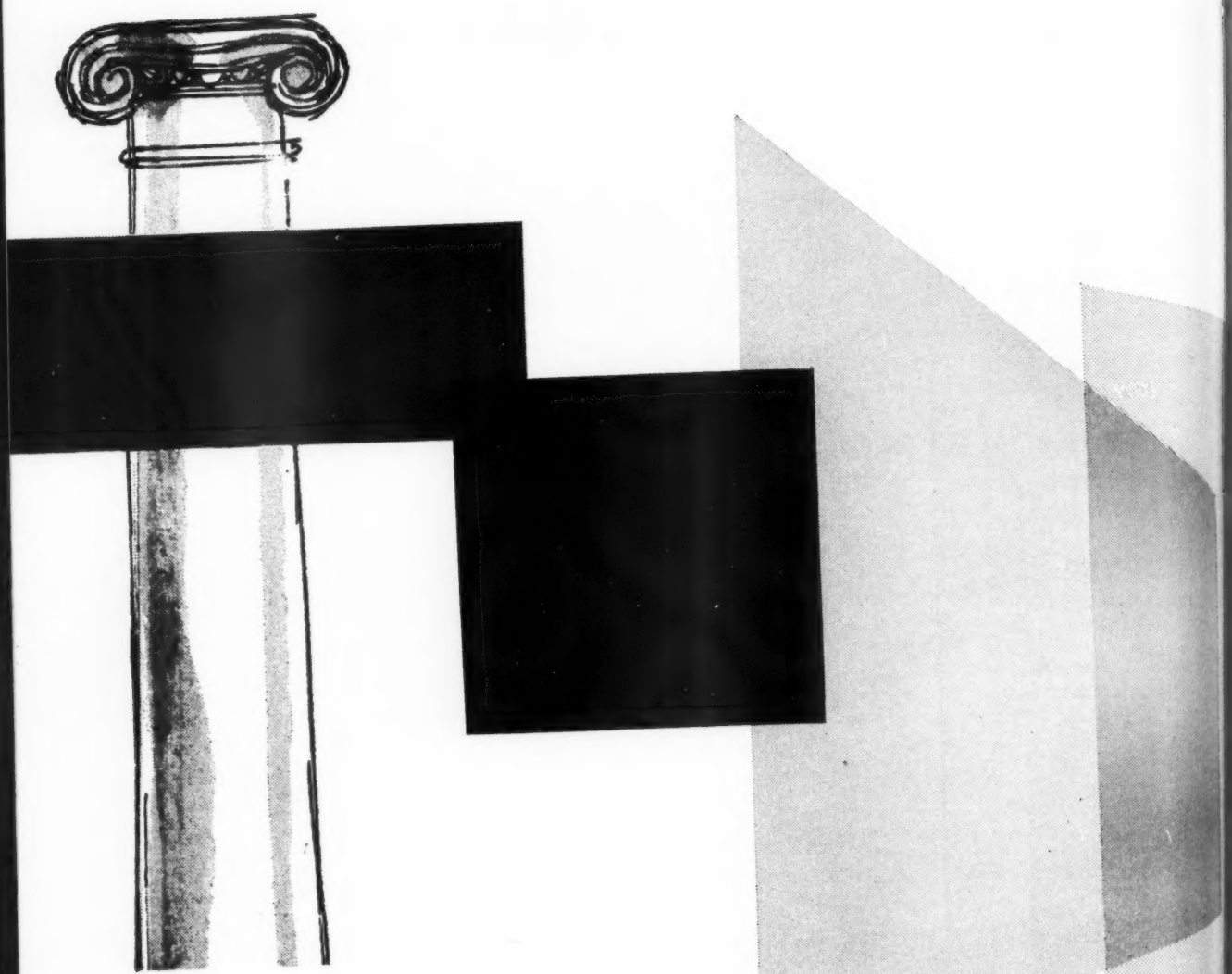

in our scientific age

WHY *read the classics?*

By HENRY T. ROWELL

It should not cause undue alarm that we are passing through an age which has been accorded several names. No learned academy has ever drawn up a precise method of procedure in this field of nomenclature, and the results speak for themselves. Man has lived through the ages of Pericles and Augustus which were, respectively, the golden ages of Athens and Rome; through dark ages which were an age of faith; through an Elizabethan age which was an English renaissance; and an age of reason which was an age of enlightenment. At present he finds himself in an age which is variously called industrial, mechanical, scientific, and atomic. He will probably, if only by force of habit, live through *it* too.

Now of the four qualifying terms for our age, I have chosen the one which appears in my title—"scientific"—because it seems to characterize best a kind of thinking which lies at the roots of a prevailing attitude toward certain educational values. They are the values which are derived from a study of the subjects which we call the humanities, especially the works written in Greek and Latin, from the time of Homer to that of the last great pagan writers, to which the convenient name of "the classics" is applied. To the various literatures of western civilization I add philosophy and history as humanistic studies in the sense in which I am about to discuss them as means of education.

First of all, then, what does the non-scientist (and by that I mean the man who does not make one or more of the sciences his *business*) mean when he says glibly that he is living in a "scientific age"? I venture to say that almost ten times out of ten he is thinking, if he thinks about it at all, of the mechanical devices which have affected some part of his physical and material life. To him the automobile, the telephone, and the electric-light bulb are "scientific" products; and since he uses them daily, he lives in a "scientific age." He also realizes that these devices

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DR. ROWELL is Professor of Latin at the Johns Hopkins University.

were "discovered" or "invented," though he rarely knows how; and he generously calls the discoverers or inventors "scientists." Finally, he has been told so often that scientific discovery has "affected his life profoundly," or even "transformed" it, that without inquiring into the meaning of "profound" or "transform" he has developed a new article of faith in his profound transformation.

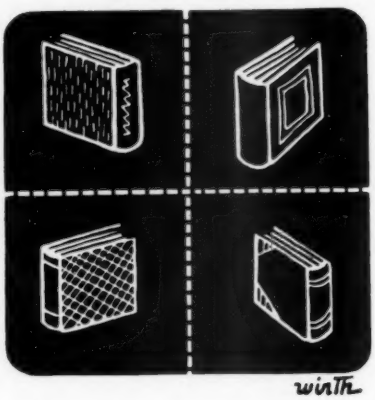
All this, of course, is quite natural: the confusion, in the mind of the layman, between scientific thought and mechanics and the somewhat pathetic belief that the use of machinery on its present scale has made him "different"—different in a better way, of course—from the uncounted millions of preceding (and less enlightened) ages. But it is worth knowing, I think, on what grounds we could justly call the present age "scientific," and on what grounds we do not seem to have the slightest right to do so.

No one could deny that developments in scientific thought, method, and achievement have been both rapid and brilliant during the last fifty years, to take an arbitrary period of time. This has been due, however, to a relatively small group of men: the professional scientists. The vast body of mankind merely looked on. If we say that we shall call our age "scientific" because during it great advances were made in science by a few of our fellow men, we shall be paying due homage to the magnitude of their accomplishments.

On the other hand, if we think primarily of the vast majority who are *not* scientists (in any connotation of the word which a professional scientist would accept), it seems that the term "scientific age" could not be a more complete misnomer. For who, after reflection, would dare to assert that a generation of men is now alive which faces the ever-recurring human problems inherent in living on this globe in a scientific way; that is, in the frame of mind which the scientist adopts when he is going about his scientific business? Such an assertion, if it were made, would fly in the face of a host of discernible facts to the contrary. Yet a thought which as a whole cannot stand up to logical proof, may be held by bits or derivations in blurred and wishful thinking.

To return, then, to our scientific age as the term is generally understood (or, rather, felt), with its roots in the progress of mechanics and a faith that the life of man has somehow been profoundly transformed by the very machines which he has invented, there are emanations from this habit of thought and emotion which today have affected man's most urgent activity. This I take to be his mental and moral improvement; or in one word, his education.

The word is a large one with many connotations. We must face the fact that it is generally accepted today in the sense of a procedure by which someone learns something, whether it is to read a foreign language, to carry out a few elementary experiments in a science, or to place historical events in correct chronological order. It is also used to designate the training of a man for a professional career, whether it be in the law, medicine, or teaching and research in an academic field. Such training, if carried out competently, cannot help but go beyond the learning of facts and touch upon the philosophical education which will be further defined below and to which this article is devoted. But my interest is not primarily in the man *qua*



doctor or lawyer or professor—the master of a certain body of knowledge and certain techniques—but in man the human being in the society of his fellow men.

It is also quite unhistorical to complain of the "modern" tendency toward practical education. The Greek or Roman boy studied rhetoric, originally, in order to improve his chances of making a successful political career. The ability to write a graceful Latin and to palaver learnedly about the ancients set a man apart from the vulgar in the Renaissance and lent him enviable kudos. The man who takes a course in hotel management today does so in the hope of becoming a particularly successful hotel manager in the future and of drawing down a large salary for his services. The emphasis on power, distinction, and wealth varies from age to age and from man to man But part, and a large part, of education has always been designed to furnish a tool by which these material or social ends might be achieved.

And yet, from the Ionic physicists until today, there has always been another facet to western education. The spirit of speculation, the adventure of thought, the love of wisdom, and the self-satisfaction felt in learning both for one's own development and for the benefit of others, all these have been subordinated time and again; and time and again they have rallied their forces and sallied forth to the attack with fresh courage and devotion. This is the part of education which does not stop with the mastery of a technique. This is the part in which man learns a language in order to read at first hand the great books which were written in it, and to profit by them; in which he learns a scientific method in order to discern the physical laws by which we are governed and man's relation to them; in which he learns to read history so that by reflecting upon it he may better understand the present in light of the past.

This part of education, which I shall call the philosophical, needs guidance too. An introduction to it is usually given piecemeal in the course of the normal four years in an American college. But by far the greater part of it is left to the individual to pursue without organized guidance, during the years of his life which extend from the end of formal education to his grave. If he has had some devotion to it awakened in his school and college days, and if he has mastered a few tools or techniques which will make further progress possible or inviting, the chances are fair that he will *continue* to educate himself philosophically. If that has not occurred, the chances for further progress, to judge from the evidence, are poor.

Now it cannot be denied, in the face of the records, that the college student is becoming increasingly reluctant to take those very courses which would or should prepare him for further self-education, apart from any consideration of

Continued on page 30

Two Hopkins engineers, G. Joseph Hudert, '31, and Bruce A. Herman, '33, inspect their "baby": the Chesapeake Bay Bridge.

Bridge Builders

NEXT summer a great bridge will open in the State of Maryland. It will tie together with a road, for the first time in history, the eastern and western shores of the mighty Chesapeake Bay.

The bridge, one of the country's biggest, is a massive engineering feat. Supervising its construction are a pair of men who graduated from the School of Engineering at Johns Hopkins within two years of each other: Resident Engineer Bruce A. Herman, bachelor of engineering 1933, and Assistant Resident Engineer G. Joseph Hudert, B.E. '31.

Here, in pictures, is how Messrs. Herman and Hudert, during a typical week this fall, discharged the heavy duties of their jobs.

Photographs for The Johns Hopkins Magazine by Robert M. Mottar

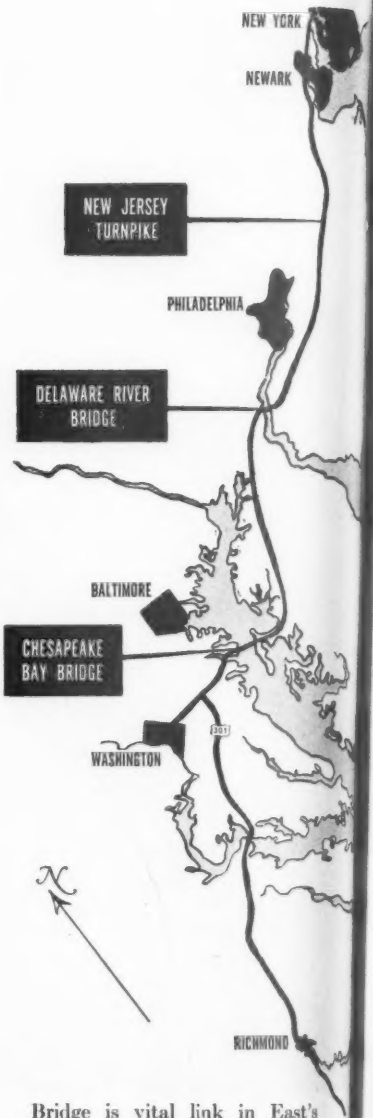
The bridge job is immense, but so should be its benefits

The statistics of the Chesapeake Bay Bridge are staggering. Over-all, it is nearly seven and three-quarters miles long; more than four miles from shore to shore. Aircraft beacons atop its main towers are 354 feet above the Bay; its deepest piles plunge 203 feet beneath. Six and a half million man-hours will go into its construction before it is complete. Eight and a half million vehicles could cross it every year.

It is expensive: an estimated $44 million. But the results should, as the map (*right*) shows, be a priceless boon. By-passing cities, the north-south route in which it is a vital link will cut hours from travel times along the U. S. east coast.

As resident engineer for the J. E. Greiner Company, prime contractor on the bridge, Mr. Herman has a job which keeps him on constant alert. The same is true of Mr. Hudert. As assistant resident engineer, he shares the burdens of the job.

Their duties are varied; they must be in and out of their office scores of times each day. They must check thousands of details. Their decision must be given on hundreds of problems every week. Sometimes there is drama; more often, harsh routine. On these pages is a sampling of both.



Bridge is vital link in East's new north-south road system.

Resident Engineer Herman sets out on regular check of bridge construction, in this case the western approach.

From launch, both men oversee a ticklish job: placing a span.

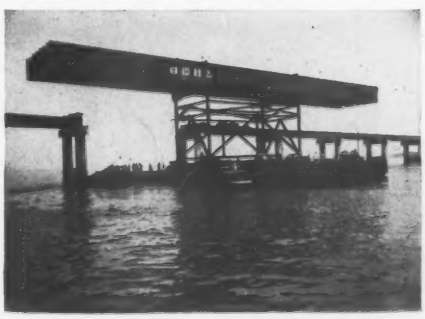
Resident engineers' job covers every aspect of bridge project.

Beneath bridge and bay charts, Herman hears contractor's problem.

He checks new batch of cement for roadway.

With Hudert, he inspects silt dredged from Bay.

Assembled span (*above*) is ready to be moved into position near center of Bay.



Air is pumped into barge, raising it in water. This floats span free.

Tug (*center*) maneuvers span into new, permanent position.

◂Hu

Dizzying work is on high steel

The most dramatic work on a bridge job is the work on high steel. The Bay Bridge has an abundance of it, and overseeing it is a part of the resident engineers' job.

High steel is no place for a timid man, or for one on whom height has its dizzying effects. It is a place where there are flying rivets, tossed with seeming nonchalance by men hundreds of feet above the chill waters of the Bay, and where hard helmets must be worn at all times to protect one's life. It is also a place, many bridge men believe, wherein lies the best beauty of the bridge: the graceful arc of a suspension cable; the hard angles of steel beams.

On these two pages are pictures which show many of these things—and how Engineers Herman and Hudert figure into the high steel jobs on their bridge.

Two high-steel men work a new beam into position. ➤

Herman is on the spot as crane (*top right*) lowers another beam into its lofty resting place.

On steel perch far above Bay, Hudert studies blueprints. Tower behind him is 1,600 feet away.

◂Hudert checks operations with worker on high suspension-cable tower.

The two engineers arrive at cofferdam, scene of coming tremie concrete pour.

On a critical job, a 24-hour watch

When a critical operation is under way, Herman and Hudert keep watch over it personally, around the clock. The photographs on this page and the three that follow show one such operation: a tremie concrete pour. Into a cofferdam based on the bay bottom, concrete is poured twenty-four hours a day, until the dam is full and all water is forced out —a week-long project, at least. The slightest slip-up might ruin the pour and force it to be started again from scratch. Herman and Hudert "spelled" one another from start to finish of the pour, and at least one of them was always on the scene.

With diver (*left*) and tremie-pour contractor, Herman goes over plans for the operation.

Pipe through which concrete will be poured is ready to be lowered (*right*) into cofferdam.

Workmen (*background*) perch on funnel through which concrete will be poured to the bottom of the bay. Mr. Herman is in foreground.

During operations, a discussion. Note (*behind center man's hands*) pipe is in place.

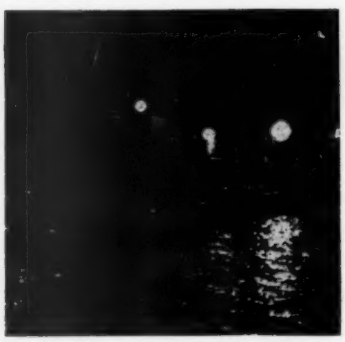
Hudert and Herman confer as water is pumped from cofferdam (*top*).

Beneath floodlights, the work moves on

Though darkness falls, work on the tremie pour cannot stop. Shifts change without a break in the pour. Floodlights go on. Out on the Bay, the lights and shadows make eerie patterns on the water, and the sounds, heard from far off, seem strange. It is pitch dark, outside the circle of floodlights, but even so a diver must descend into the chill water to make sure that the pour is progressing satisfactorily on the bay floor. He is hauled out, gives his report to Hudert (*opposite page*).

Bridge men curse this kind of job while it is going on; but they refer to it with pride after they have sweated it out to a successful conclusion.

Hudert (*left*) and foreman hash out night operating problem.



Beside concrete-pour pipe, he holds briefing with diver (*left center*).

At 3 a.m., activity is at same high pitch as in daytime

Diver comes up ladder after midnight inspection under water.

Weariness shows in faces of Hudert, diver, and diver's helper.

Now: Motion Pictures By X

Dr. Russell H. Morgan announces a development which for the first time permits long movies to be made of human organs in action

Jack Engeman

EXACTLY one year ago this month, Dr. Russell H. Morgan announced the development at Johns Hopkins of a new machine which many medical men believed would, quite literally, revolutionize x-ray and fluoroscopic techniques. For radiologists, Dr. Morgan's machine embodied several truly exciting features. It would give fluoroscopic images of unparalleled brightness. It would allow x-ray examinations of long duration. Its possibilities for teaching students and for answering research questions seemed well beyond the possibilities offered by standard equipment known up to that time.

In September of this year, Dr. Morgan exhibited his machine, called the electronic fluoroscope, before the national meeting of the American Roentgen Ray Society in Washington. The society awarded to him, and to Ralph E. Sturm, his assistant in the project, its Gold Medal for singular achievements in the field of x-ray.

Within several days after this article is published, Dr. Morgan will make public announcement of an extension he has made to the machine. He has attached a motion picture camera to it; and, as a result of the unusual brightness of the x-ray image, he has been able to take

◄ *Dr. Russell H. Morgan examines an x-ray image appearing on the fluoroscopic screen intensifier which he has developed at Johns Hopkins.*

By X-Ray

Jack Engeman

X-ray movies of a patient's chest are made during an examination by Ralph E. Sturm (left) and Dr. Morgan. The bright x-ray image appears on the viewing screen between the two men. The patient lies at lower left; the device above him receives the rays and, in the manner of a television camera, brightens their light as much as three thousand times before the image appears on the viewing screen. Focussed on the screen, the movie camera (right) makes a permanent record of the examination.

movies—movies covering several minutes of consecutive action, many times longer than anything that was previously possible. These motion pictures are considered the first practically successful ones ever made of the internal actions of the human body. Their aid to medicine, particularly in the realms of teaching and research, is expected to be very large, as this article will show.

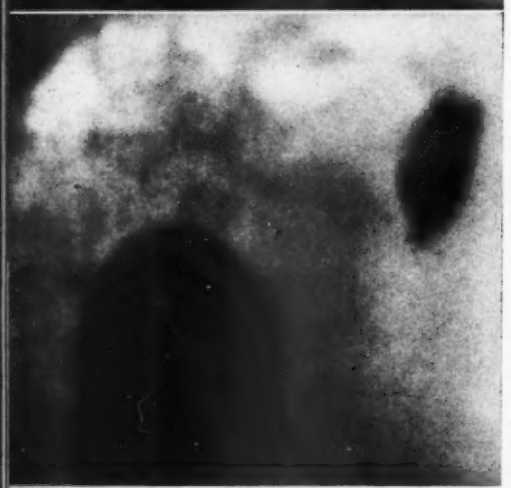
BEFORE Dr. Morgan succeeded in his development, the rapid advances in the field of x-ray had carried it close to the apparent limit of its possibilities. Very good x-ray photographs could be made; but they were pretty well restricted to single pictures. To observe the actual functioning of organs, it was necessary to use a fluoroscope, in the familiar and not-altogether-pleasant examination in which the patient drinks a solution of barium sulphate while standing before an x-ray screen.

Both of these methods have inherent disadvantages which were becoming more and more serious. The fluoroscope gives the doctor the advantage of an extended view, ten minutes or more, of the patient so that he can watch the barium travelling through the intestinal system. But his view is very dim; the fluoroscope is only about one ten-thousandth as bright as daylight. Before a fluoroscopic examination the examining radiologist has to spend fifteen to thirty unremunerative minutes sitting in a dark room to get his eyes adjusted to low light. And the image is so dim that even then he can see only the main action; many of the details are lost.

For a clearer picture he must use x-ray films, instead of the fluoroscope. This process employs a much greater quantity of rays in order to bring out more detail. But there is obviously a limit to how high the radiation can go; there is also a limit to how long it can remain on a patient. A safe amount produces single photographs on transparent film which, when read in an illuminated view box, are satisfactory for getting most data on the formation of a patient's bones and organs.

To see the actual functioning of these organs, however, x-rays must be applied long enough to get a *sequence* of photographs. The longest period of a motion-picture examination heretofore possible has been only three seconds; longer application of the x-rays would damage the patient, endanger the radiologist, and destroy the x-ray equipment itself. Further, the patient can stand only one of these three-second tests. If the radiologist misses the action that he is looking for (which is quite possible in such a short interval), he cannot repeat the run on the same patient.

Clearly, development had reached what was apparently a dead end. A detailed picture was limited in the length of time it could cover. An extended view



The photographs, left and on the opposite page, are taken from one of the first x-ray motion pictures ever made of the human body. They show a barium solution moving in an S-curve, from lower left to upper right, up through a child's intestines during a barium enema.

Enlarged x-ray images, thrown from Dr. Morgan's screen intensifier by a projection kinescope, are used to teach a medical class the principles of radiological technique. This method and the x-ray motion pictures are expected to be widely used for medical education.

was limited in its preciseness. It seemed that the only solution was to increase the radiation; but the limit of safe dosage had already been reached. An entirely new method of making x-ray motion pictures had to be developed. And this is essentially what Dr. Morgan has done.

INCREDIBLE as it will seem to those who regard TV as one long series of Howdy Doodys, Milton Berles, and Martin Kane, Private Eyes, television provided the answer. TV is the heart of the new x-ray machine.

Professor of radiology at Hopkins Medical School and radiologist-in-chief at the Hospital, Dr. Morgan was well aware of the problems and possibilities of x-ray. The basic difficulty was that the images were not bright enough. Since it was demonstrably impossible to brighten them at their source by increasing the radiation, he reasoned that the only solution was to brighten them *after* they were made.

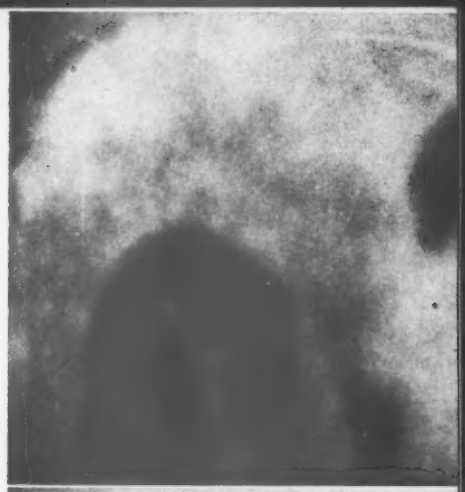
After three years of work, Dr. Morgan and Mr. Sturm have successfully produced the machine which (though it is not yet "clean" enough for general clinical use) is many thousand times brighter than the standard fluoroscope. It starts with x-ray equipment of conventional design: an x-ray generator, operating at the voltage used in fluoroscopic examinations, rests on the floor beneath the patient. Its rays pass up through the patient, who lies on a stretcher, and into an image detector, consisting of a fluoroscopic screen. At this point the image is just what the radiologist sees in a standard fluoroscopic examination.

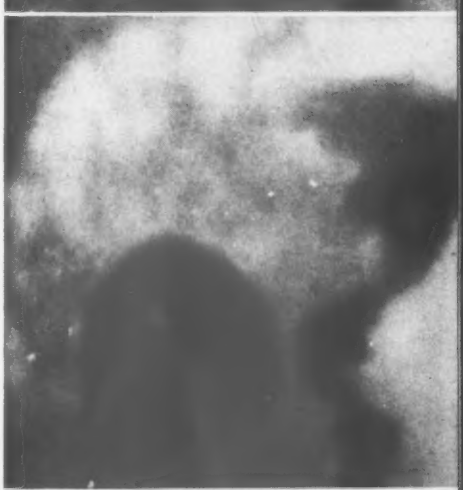
The image is now transferred by means of a Schmidt optical system (a series of mirrors) onto an "image orthicon," which is the standard pickup tube used in many television cameras. This converts the image into an electric current. In the same way that television images are amplified, the original x-ray image is amplified as many times as is necessary (generally about three thousand times). It is then transferred to a standard television viewing screen where the electronic image is reconverted into a visual image, which by this time is so bright that the viewing room need not even be darkened.

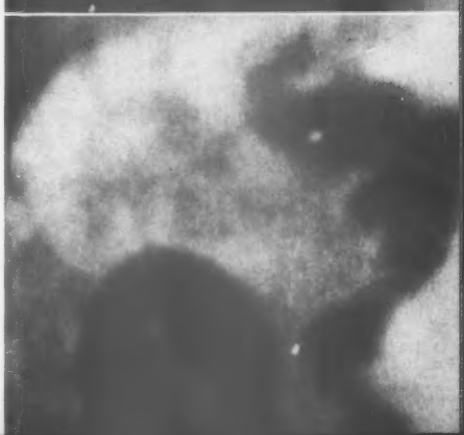
This x-ray picture, with its improved clarity and increased brightness, offers the radiologist a more complete diagnostic pattern than he has had before.

Dr. Morgan has attached to his apparatus a projection kinescope which will project a three-by-four-foot image on a screen. Attaining almost the brightness of a slide projector, these x-ray projections are splendid for teaching because a whole class is able to watch an examination.

The latest attachment is a motion picture camera, mounted directly in front of the television viewing panel. This has produced astonishingly successful movies. The three-second time limit on earlier movies had made them virtually useless for many studies. Now,







movies lasting up to fifteen minutes are possible for the first time, and they promise to be an immensely important tool for both research and teaching. A new version of the first model has been built particularly with motion pictures in view; its greater brightness—up to a phenomenal fifty thousand times as bright as the standard fluoroscope—is hoped to produce even better movies than those that have now been made.

Dr. Morgan's intensifier will affect three major fields of medical work: research, teaching, and diagnosis. Probably its effect on research will be the greatest, for it is here that brightness and an extended time of study are most needed. Already doctors are recording actions within the human body which were never recorded before, and about which researchers could only theorize. It is reasonable to assume that x-ray movies will be taken of many actions within the body and that these records will be used to discover more of the exact functioning of normal and diseased parts.

The one part of the body which remains a problem is the abdomen. The chest can be successfully x-rayed because, thanks to the lungs, the chest is largely air. But the solidity of the abdomen restricts successful x-ray photography. Dr. Morgan has one remarkable motion picture showing a barium enema in a child; occasionally, good pictures may also be made of very thin adults. Normally, however, it is difficult to make abdominal x-ray photographs of adults, and almost impossible in the case of heavy persons. The bright x-ray has helped this problem, but it has by no means solved it.

Dr. Morgan believes that the new intensifier offers an improvement over every phase of x-ray and fluoroscopy except in the problem of sensitivity. Although the brightness is greatly increased, the clarity remains only "reasonably satisfactory." This is particularly noticeable in abdominal x-ray images, whose very faint light the device is not sensitive enough to pick up. In theory this sensitivity should be much greater than it is, and Dr. Morgan believes that in practice, too, it can be considerably increased. The first model has largely solved the brightness problem, so that he is now able to turn his chief attention to sensitivity. It is hoped, in fact, that current experiments will produce three times the present clarity, and later models should do an even better job.

In the field of teaching, these drawbacks will not be so important. Mention has already been made of projecting a greatly enlarged image onto a screen so that a class may be taught. This may be used to show beginning medical students the functioning of human organs, and it also may be used to teach the

Continued on page 28

SAIS

The University's newest school custom-tailors a course for every student. Its objective: to produce men of extraordinary ability to represent this country abroad.

By JAMES H. BREADY

Photographs for The Johns Hopkins Magazine by Werner Wolff, Black Star

THE Homewood campus of the Johns Hopkins University is a panorama of Georgian architecture; at the Johns Hopkins Hospital the accent is on Victorian; the design of the Hopkins Laboratory of Climatology in New Jersey could be called Agricultural Frame; a good description of the principal Applied Physics Laboratory structure in Silver Spring, Maryland might be Late American Factory; in Alaska, the scene of Hopkins' arctic research is in part Contemporary Igloo. Completing the cycle, it is something of a relief that the "Washington campus" of the University is more-or-less Georgian brick.

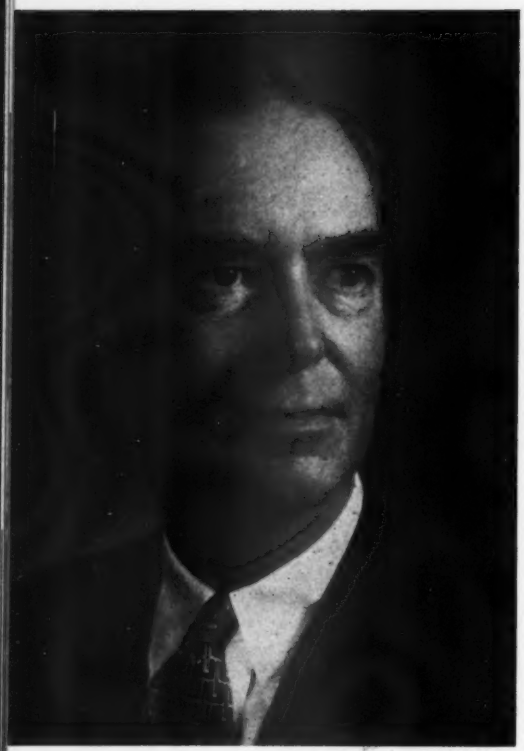
The abundance of Hopkins units has obscured even the fact that there *is* a Washington campus. In Washington, correspondingly, there remains some public unawareness that what is commonly listed as the School of Advanced International Studies has become a component of Johns Hopkins. Nevertheless, a little more than a year after the amalgamation, it can be stated that mutual interest and respect between the University and its young affiliate are great.

JOHNS HOPKINS, D. C. style, does not catch attention physically. Occupying two large buildings on Florida Avenue and Nineteenth Street, two blocks from the luxury shops of upper Connecticut Avenue, its "campus" is primarily one of sidewalks and traffic, not lawns and trees. Yet here, in small and carefully chosen numbers, are advanced Hopkins students, men and women training for world careers. Here, in the time-saving abbreviation favored by matriculates, is "SAIS," an institution dedicated to filling "the need for unusually able and thoroughly trained individuals essential to more intelligent and effective government and business relations with other nations."

In origin, SAIS goes back to 1943 and the chartering of the Foreign Service Educational Foundation, a private, nonprofit corporation organized and still headed by Christian A. Herter, Republican member of Congress from Massachusetts and a Johns Hopkins trustee. Serving with him in an advisory capacity are such men as Warren R. Austin, this nation's representative in the United Nations Security Council; William L. Clayton, former Under Secretary of State and a fellow Johns Hopkins trustee; Allen W. Dulles, deputy administrator of the Central Intelligence Agency; and Joseph C. Grew, former ambassador to Japan and Under Secretary of State. James V. Forrestal, the late Secretary of Defense, was also an overseer of the foundation.

During World War II, these men (and others) foresaw a growing role for America in foreign relations—in expanding foreign trade and in the increasing international responsibilities which the Amer-

Dean of the School of Advanced International Studies is Philip W. Thayer. His specialty is international commercial law.



Harris and Ewing

Representative Christian A. Herter (above) *organized and still heads the Foreign Service Educational Foundation, which developed SAIS.*

ican government would face. U. S. business firms and government agencies, they felt, would need a sort of employee not previously available in sufficient numbers: career men and women with an educational background in foreign relations which was both thorough—on a high-scholarship level—and practical. To provide such a background, Congressman Herter and his associates worked toward the founding of SAIS.

The postwar experience in international business did not work out quite the way they had anticipated. The predicted boom in overseas trade has been stunted by the cold war and other considerations. But at least as great a need for such highly developed persons *has* developed, as the founders had anticipated, as a result of the postwar tensions in international relations. The need in government for highly qualified, potential leaders in the international field has been, in fact, even more urgent than the founders of the Foreign Service Educational Foundation and SAIS could have foreseen.

For six years, SAIS was possibly this country's only independent, unattached, degree-granting graduate school. In 1950, after much thought by the trustees, it was decided to affiliate with a major university—specifically, Johns Hopkins. The benefits to both institutions would be great: to SAIS, the affiliation would mean an enhanced ability to attract the highest-calibre faculty and students and to broaden the scope of its curriculum and research; to the University, it would bring an established school in the field of international relations, located in the strategic center of world affairs.

On September 10, 1950, in a joint statement by President Bronk of Johns Hopkins and Congressman Herter, the arrangements were announced. SAIS would continue with its same faculty and curriculum; it would remain in Washington, with its buildings, library, and equipment transferred to Johns Hopkins; it would be entirely separate from, and not duplicate the work of, the University's Walter Hines Page School of International Relations at Homewood, which was primarily a research institute.

Who are its students? Who are their instructors? What do they study? How? And with what goals in mind?

The answers, in one form, could be gleaned from the long, careful files in the office of the registrar. An even more graphic view, however, was that which was obtained by the students themselves

Dr. William T. Phillips, professor of international economics at SAIS, has had a broad experience in his field.

Dr. Majid Khadduri, professor of Middle East history and politics, heads "most nearly complete set of Middle East courses in U. S."

this fall, at a convocation formally opening the new school year.

As a ceremony, it involved forty-eight new students. They sat in easy chairs and sofas facing Dean Philip W. Thayer and, in rotation, most of the SAIS faculty. From Dean Thayer himself, after a welcome, came insight into the academic position that makes SAIS apparently without parallel among American graduate schools.

SAIS is, he explained, neither a research institute for inquiry into obstruse points of international affairs nor a foreign-service cram-school. Institutions in each category already abound; SAIS, by contrast, is a mean between the extremes. "Being concerned with fundamentals," Dean Thayer said, the School does not attempt extended, original inquiries along the frontiers of knowledge, in the tradition of most Johns Hopkins units. But neither does it tailor its product inflexibly to the fit of specific Civil Service examinations, say.

The educational method of SAIS focuses on the individual. "You will be under pretty close observation here," Dean Thayer told the bachelors of arts from Harvard and Bates and the University of Oslo and C.C.N.Y. and Johns Hopkins and Vassar and the Tokyo Imperial University (to name but a few of their sources). "We evaluate you individually; we try to determine what you can do—and what you can't do.

"Right now," he went on, "it is for you to evaluate us, and pick the courses and seminars and language you propose to study this coming year."

It was still more reassuring when Dr. William T. Phillips, professor of international economics and head of the School's vocational guidance committee, began talking about jobs. "So far as we know," he said, "not one graduate of the School is out of work." Government agencies, he reported, have a springtime habit of calling SAIS and saying, "Send over your three top students in the such-and-such area for job interviews." Dr. Phillips named some of them: the Departments of State and Commerce; Central Intelligence; ECA.

But then he let the boom fall: "But first, of course, you'll ordinarily find it necessary to graduate. To do that—well, you've all heard about the forty-hour week. Here, you'll learn all about the *eighty*-hour week."

No thesis is normally required for an M.A., he said; and some students may attain that goal in two terms. But sturdy is the student who can cross the finish line so quickly.

In languages, for instance, the re-

Dr. Miron Burgin, lecturer on Latin American economic affairs, is one of the Department of State's leading men in the field of Latin American relations.

Dr. Clinton Knox, who teaches diplomatic history, is State Department expert on Western European affairs and research.

Dr. Mose L. Harvey, lecturer on Soviet affairs, is a State Department authority on the USSR and Eastern Europe.

quirement is fluency in at least one modern, non-native tongue. The language exam, before a three-member board (the teacher, who at SAIS is almost invariably a native of the country concerned; a member of the regular faculty; and an outsider, such as someone from an army or navy examining board) is in three parts. First, a newspaper editorial or article in the language, relating to foreign relations, must be read silently and then summarized orally, in the language. Second, a more-or-less technical text in the language must be formally translated into English. Third, still another passage in the language must be read silently and then be used as the basis of an oral discussion between students and examiners—again in the foreign language. Considering that many students *start* their language at SAIS—Russian or Arabic or Hindustani, for instance—the height of this hurdle is apparent. The beginner in Arabic, for one, usually needs two full years and cannot carry the four-course load usually prescribed for Romance-language specialists; Arabic is too tough to permit it. The language choice is wide: one young man a few years ago arrived speaking eight languages already; he finally settled down to learn Malay.

A STUDENT also usually concentrates on the study of a specific area of the globe. Less often, pursuing instead a goal in international law or international finance, he will cut across many areas. But extensive digging into economics, politics, ethnology, history, and other lore is the consequence in either case.

"A mastery of research techniques in the field of international relations" is the desideratum, in Dean Thayer's words. The only way to acquire it is through experience of this sort.

The result can be projected more concretely: if a student decides he wants to write a book about the international administration of Tangier, he will not do it at SAIS. But he will leave SAIS equipped to go on to another university—or, better, to the Library of Congress—or, best of all, to Tangier—to write it. If, by the opposite side of the yardstick, his goal is appointment as a Foreign Service Officer of the United States, then once he has indeed become a career vice consul at Tegucigalpa, the informational resources qualifying him for such work will not (as has been known to happen with cram-school graduates) melt under the Honduran sun.

Dr. Paul M. A. Linebarger is professor of Asiatic politics at SAIS. His background in Far Eastern affairs is extensive. He is, in addition, an authority on psychological warfare.

For the year 1951-52, area study at SAIS is subdivided into Europe, the Far East, Latin America, the Middle East, and Russia. Of these, probably the most intensive is Middle East. The second SAIS building is a white classroom structure that also houses the Middle East Institute, an affiliated research enterprise. With its cooperation, Professor Majid Khadduri and two lecturers offer "the most nearly complete set of Middle East courses available at any institution in this country," in the lightly-accented words of Dr. Khadduri, an Iraqi.

"Background of the Middle East," a year-long introduction, is followed by "The Contemporary Middle East," given throughout the second year which most Middle East students find necessary. Half-year courses include the study of Islamic law and institutions, constitutional organization in the modern Middle East, and Middle East economic problems. Broken down, this last, for instance, covers physical resources, finance, land tenure, trade patterns, and (assuming greater-than-average importance this year) Iranian oil. Here, as in other departments, the curriculum varies from year to year, in concert with the needs and desires of those enrolled.

DEAN THAYER, the man responsible for shaping this instruction, has himself been in most of the areas as recently as last summer. His semi-official tour of world trouble-spots included Singapore, Saigon, and Batavia.

To go farther back, he was Harvard '14, *magna cum laude;* went on through Harvard Law School; served in the first-war Navy; spent eleven export-import years in the Far East; and since then has been teaching—except for second-war years in the State Department's Division of World Trade Intelligence and as special assistant to our ambassador in Chile. Professor of International Commercial Law at SAIS since 1946, he was made dean in 1948.

His faculty members are of three kinds: four other full-time professors, six to ten lecturers, and a language staff of varying size. Dr. C. Grove Haines, formerly of Syracuse University, is professor of diplomatic history. An expert on psychological warfare, Dr. Paul M. A. Linebarger, is professor of Asiatic politics. Doctors Khadduri and Phillips, whose work has been mentioned earlier in this article, are also full-time men.

New among this year's lecturers is Dr. Clinton Knox, taking the place of Dr. Haines (who is on leave). A former faculty member at Maryland's Morgan State College, Dr. Knox lives in Baltimore and commutes daily to SAIS and his State Department career job as assistant chief of research on Western Europe.

Other lecturers are drawn from such

Willis C. Armstrong, lecturer on Soviet affairs, has served with our embassy in Moscow, is now with the Department of State in Washington.

Dr. Roderic Davison, lecturer in European history at the School, is associate professor of European history at George Washington University.

sources as the staff of the House Foreign Affairs Committee and the Department of State. A special series of lectures is being given this year by Dr. James Burnham on "The Background and Development of World Communism." In the future, it is expected that Johns Hopkins professors at Homewood may travel to Washington to give courses and that SAIS students may periodically come to Baltimore. (One SAIS student this fall is working at both places, to complete a doctoral dissertation on Russo-German Relations, 1939–41.)

THERE is probably no such thing as a "typical" student at SAIS. But representative, perhaps, is Leo Badart, who specializes in the Middle East. At twenty-eight, he has never been even near the Middle East, but as a GI in Mindanao he formed a strong interest in the Moros and their Mohammedan civilization. Returning after the war to the University of Maryland as an undergraduate, he heard about SAIS from a professor. Now he commutes sixty miles daily from his home in Elkridge, on the Baltimore-Washington road, so that he may concentrate on Turkey or Iran. His goal is government post or private job; he doesn't worry about which it will be, so long as he can ultimately "be of some use" in a field where "it's only too obvious every day that experts are needed."

Rooming in a private home nearby (SAIS has no women's dormitory) is Rae Stillman, a past resident of Wareham, Massachusetts and a probable future resident of Latin America (regardless of shop talk that the Latin American field is in some respects overcrowded). Miss Stillman was interested in SAIS by a sister living in Washington; in Latin America by other family connections.

THE upper floors of the four-story main building (where Dean Thayer has his office, the cafeteria is located, and the growing, sixteen-thousand-volume SAIS library is housed) are devoted to living quarters for men students who customarily comprise five-sixths of the SAIS student population.

A quick index to the seriousness of life at SAIS is visible on the very walls of these rooms. Through doors up and down the long corridors, the only pinups to be seen are the cartographical kind: the elegant mapwork of the National Geographic Society relieved only by an occasional display of still larger-scale charts put out by the Army Map Service.

In his office downstairs, Dean Thayer annually wonders just what, besides the lure of far places, has induced his new protégés to involve themselves in the stresses of international service.

"The girls," he observes, "tend to arrive with a little more idealism than the men. The hard, practical work here knocks some of it out of them; but even so, when they become outraged over the cynical tone of international relations and want to try to improve things, I can't altogether disagree with them."

Dean Thayer warns students that it is no soft life which they are choosing. A graduate *might* become Secretary of State or ambassador plenipotentiary and envoy extraordinary or vice president in charge of overseas operations; but he is far *more* likely to be slugged, shot at, ambushed, or otherwise roughed up, and a long way from home.

Aside from physical danger, there is the possibility of being caught between the crossfire of clashing foreign-policy groups in this country, and of being denounced as "disloyal" for having reported events or trends overseas that displease such groups.

"But in these days, waking up to find oneself falsely defamed is no monopoly of people in international relations," Dean Thayer comments.

SAIS, open to qualified comers without reference to gender, race, or nationality, has found its students sufficiently loyal so far. The approximately 370 persons

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NEWS at Johns Hopkins

BALANCE SHEETS

The University and the Hospital this fall released their financial reports for the 1950–51 fiscal year. They told a story which was generally encouraging and in some respects even astounding.

The Hospital spent only $67,526 in excess of income—an astonishing drop of $900,000 from the corresponding figure in the 1947–48 fiscal year, achieved during a period when all costs, from labor to materials, were on the rise throughout the country. W. Frank Roberts, president of the Hospital board of trustees, attributed the accomplishment to such factors as an increased use of hospital facilities and a postponement of all expenditures not clearly necessary now to maintain high-quality service. But there was a danger inherent in the second factor, he warned: "With buildings as old as many of those at the Hopkins Hospital," he said, "these expenditures cannot be postponed any longer."

The Hospital had served more in-patients during the past year than in any similar twelve-month period in its history, Dr. Edwin L. Crosby, hospital director, reported: a total of 23,940 patients received 282,144 days of care. The average stay decreased during the year, thus allowing more patients to be cared for.

The report of the University's treasurer, Henry S. Baker, disclosed that the institution's total expenditure for the year had been $18,058,035, of which $9,988,000 went into U. S. government research projects. Total income was $17,432,000. President Detlev W. Bronk said that among all colleges and universities in the country, Hopkins, it is believed, is carrying one of the greatest loads of responsibility for government research. Because of past performance in scientific research done at Hopkins, he explained, the University has received repeated requests from government agencies to take part in more and more basic research of importance to the nation. Such investigations for the government are conducted under contracts which are designed to involve neither profit for the University nor financial loss for the institution.

In addition to government-contract revenues, $2,027,389 came to the University in gifts and grants for specified purposes; $1,479,000 was derived from endowment income; and $1,734,000 from tuition and laboratory fees. Gifts for general and unrestricted use amounted to $423,932. Carlyle Barton, president of the board of trustees of the University, noted that a study of university investments over the past ten years shows a rise of one per cent—from 3.8 per cent in 1941 to 4.8 per cent in 1951—in the percentage return on the historical book value of invested funds. Even so, endowment income as a percentage of the total current income has decreased materially. In 1941 it formed 41.8 per cent of the University's total income, while today it represents only 22.9 per cent of the total, even excluding the income from government research contracts.

DRAB DIET, GOOD HEALTH

In spite of austere diets and drab menus, the people of Great Britain are in better health today than they have been in the past. The reason, according to Dr. Leslie J. Harris, director of the nutritional laboratory at Cambridge University, can be put in one word: vitamins. Vitamin research between two world wars and during World War II, Dr. Harris told his audience at the Johns Hopkins School of Hygiene's DeLamar Lecture series this fall—plus a nationwide application of the knowledge gained from it—has virtually wiped out the "deficiency diseases" which plagued Britain during World War I. During the last war rickets, xerophthalmia, scurvy, and beriberi presented no problem to British medicine.

Even before the war, Dr. Harris reported, the importance of the vitamin research begun after World War I had been proved. Among other things, a measurable increase took place in the average height and weight of children in particular age groups: a result of an improved school-lunch program, with milk playing an important part.

German U-boat activity in World War II greatly intensified British nutritional problems; vitamin-packed foods became scarce on the British market. To offset the limited availability of fresh fruits and vegetables, the British ate the "national loaf"—bread made of flour especially processed to retain up to eighty-five per cent of the wheat content. Potatoes, while not so rich in vitamins, produced the desired result in the long run, since people ate so many of them; and American dried eggs added necessary protein.

HOW MUCH DRINK?

How much must humans and animals drink? Two Hopkins psychologists, looking for answers to some of the problems of hunger and thirst, are using an electronic device, which they call the "drinkometer," to find out. Through it, they hope to determine the nature of the mechanisms responsible for some of man's basic drives and motives, of which hunger and thirst are primary ones.

Since most of these same drives appear in animals (which are easier to study than people) Psychologists J. Harry Hill and Eliot Stellar are using animals in their investigations. The drinkometer was designed specifically for rats, but can be used on other mammals just as well. It can record the intake of a variety of fluids and can be used to study alcohol consumption and hunger for solutions of vitamins, salts, and sugars, in addition to the drinking of plain water. The instrument makes it possible for scientists to find out not only how much the animal drinks, but also when it drinks and how fast. And it does so without disturbing the animal, without making it work, and without training it.

The psychologists have discovered that rats drink water at a steady rate of six or seven laps a second, regardless of how long they have been deprived of

it or how long they have been drinking. In a twenty-four-hour day, rats spend only about twenty minutes quenching their thirst.

Animals, Dr. Stellar explains, drink amounts of water proportional to their needs. They tend to overestimate these needs somewhat, but their bodies can easily dispose of the excess (the same overestimation holds true for their other body requirements).

The rat, for instance, needs a good deal of sugar to stay healthy. When the researchers mixed sugar with the rat's water, they found (by means of the drinkometer) that the animal usually took the large amount its body required. When a vitamin solution was offered, the rat accepted only the very small amounts which its body needed.

Each substance, such as sugar or salt, sets off a different animal mechanism which regulates hunger or thirst, the psychologists explain. When the rat, for instance, has drunk as much water as it needs, the "mechanism" shuts off its thirst and the rat stops drinking.

Humans have these efficient mechanisms, too, but they are often complicated by emotion and learning—factors which are present, but not highly developed, in the rat. Despite these complications, says Dr. Stellar, humans still do a pretty good job of satisfying their body requirements. As a rule we manage to keep our intake of water at the same level as the amount of water our bodies are losing.

What are the mechanisms which make this regulation possible, and why do they sometimes become upset? The Hopkins scientists are attempting to find out.

If a fever-ridden patient, for instance, cries for water, one can be fairly certain that his body needs water, although fear and anxiety may cause him to drink too much. But what has happened to the "regulator" in a perspiring football player who dashes off the field, gulps down a pint of cold water, and then collapses in a faint? The research by Dr. Stellar (who is assistant professor of psychology) and Mr. Hill (who was doing graduate work at Hopkins when he and Dr. Stellar invented the drinkometer, and is now connected with the Institute for Research in Human Relations in Washington) may provide some answers.

THE FACULTY AND STAFF

● PRESIDENT DETLEV W. BRONK last month presided at the fall meetings of the National Academy of Sciences, of which he is president. He attended two meetings of the National Science Foundation, as well as meetings of the Board of Scientific Directors of the Rockefeller Institute, of the Commission on Financing Higher Education in New York City, of the National Advisory Committee for Aeronautics, and of the American Philosophical Society.

On October 15 Dr. Bronk addressed the National Wholesale Druggists Association convention in Houston, Texas, and on October 18 he was awarded the honorary degree of Doctor of Science at the University of Chicago.

● IN THE SCHOOL OF HYGIENE AND PUBLIC HEALTH, Abraham George Osler has been promoted to assistant professor of bacteriology.

Ronald MacFarlane Wood has been named assistant professor of bacteriology.

● IN THE MCCOLLUM-PRATT INSTITUTE, Henry N. Little has been named assistant professor of biology.

● IN THE FACULTY OF PHILOSOPHY, Richard T. Cox has been named dean of arts and sciences; he had been acting dean.

Robert Dudley Fowler has resigned as professor of chemistry to become associate leader of the division of chemistry and metallurgy of the Los Alamos Laboratories of the University of California.

John W. Gryder has been promoted to assistant professor of chemistry.

Judson L. Anderson has resigned as associate professor of geology to become a consultant engineer in Houston, Texas.

Ludwig Edelstein has been appointed visiting professor of philosophy at the University.

Friederich I. Mantner has been named assistant professor of mathematics.

George E. Owen has been named assistant professor of physics.

● IN THE THOMAS COURTNEY JENKINS DEPARTMENT OF BIOPHYSICS, Francis D. Carlson and Clarence M. Connelly have been promoted to assistant professor.

● IN THE SCHOOL OF ENGINEERING, the following have been appointed to the post of assistant professor: Robert Long, civil engineering; Robert Adams and Rocker T. Staton, industrial engineering.

● IN MCCOY COLLEGE, Howard E. Cooper, professor of accounting at the University, has been named associate dean.

● AT THE HOSPITAL, Edwin L. Crosby, director, has been chosen president-elect of the American Hospital Association. President Truman has named him to the national advisory committee on the drafting of physicians, dentists, and allied specialists into the armed services. Dr. Crosby has also been named by Charles E. Wilson to the Office of Defense Mobilization's health resources advisory committee.

● AT THE SCHOOL OF MEDICINE, C. Bernard Brack, assistant professor of gynecology, has been elected president of the Maryland Division of the American Cancer Society.

Emil Novak has been named assistant professor emeritus of gynecology.

Samuel J. Crowe has been appointed professor of laryngology and otology.

Robert W. Johnson, Jr., has been made professor of orthopedic surgery.

Harvey B. Stone has been made associate professor emeritus of surgery.

Three men have been promoted to the position of associate professor, full time: C. Lockard Conley, medicine; Philip A. Tumulty, medicine; and John W. Magladery, neurology.

The following assistant professors, full time, have been named:

Samuel P. Asper, Jr., medicine; David Grob, medicine; Eugene Meyer, medicine and psychiatry; Ronald M. Wood ophthalmology; Barton Childs, pediat-

Mt. Vernon-Woodberry Mills

Thomas M. Bancroft

Mr. Bancroft, president of Mt. Vernon-Woodberry Mills, Inc., one of Baltimore's oldest textile firms, has been elected to the board of trustees of the Johns Hopkins Hospital. He is a director of the United Fruit Company, the Fidelity-Phenix Fire Insurance Company, and the Niagara Fire Insurance Company; and a trustee of the New York Association for the Blind, Middlesex School, Institute of Textile Technology, and the American Cotton Manufacturers Institute.

rics; Francis P. Chinard, physiological chemistry; Carlton C. Hunt, physiological optics and physiology; Henry T. Bahnson, surgery; Milton Edgerton, plastic surgery; and Curtis Marshall, neurological surgery.

● At the Applied Physics Laboratory, Henry H. Porter has returned after spending two months in England visiting research, aircraft, and industrial establishments to obtain information on British developments in the guided-missile field. Dr. Porter is head of APL's Bumblebee research program.

F. N. Frenkiel recently delivered a paper on "Applications of the Statistical Theory of Turbulence to Micrometerology" at the General Assembly of the International Union of Geophysics and Geodesy in Brussels. He also attended the Third Anglo-American Aeronautical Conference in Brighton, England, and the Heat-Transfer Discussions in London.

S. Fred Singer has returned to Silver Spring after a year in Europe for the Office of Naval Research.

Nine new members have joined the APL staff:

Robert J. Rubin, of Cornell University;

William F. Donoghue, Jr., a mathematician from the University of Wisconsin;

Louis F. Biosca, formerly of the Allen B. Dumont television laboratories;

James D. Rough, of Rutgers University;

Leroy W. Evans, formerly electrical engineering teacher at the U. S. Naval Post-Graduate School;

Sidney H. Spencer, of the Geophysical Instrument Co. in Arlington, Va.;

John G. Chubbuck, formerly teaching electrical engineering at Kansas State College;

Wilbur W. Hawley, of the High-Altitude Observatory at Boulder, Col.;

Edwin D. Kennedy, formerly a technical editor for the Radio Corporation of America.

DEATHS

(Dates are 1951, unless otherwise noted.)

Louis Woodley Atkinson, '87–'88 (Arts), September 26, 1950.

Raphael A. Bendove, '27–'28 (Hyg.), September 21.

Robert Jay Cook, M.D. '13, October 4.

George Evans, g. '04–'06 (Lat.), '12–'13 (Fr.), September 5.

James R. Evans, '07–'08 (Med.), August 22.

Vashti Louise Garey, '23 (Nurs.), March 10.

Dementi Studio

Douglas Southall Freeman

Dr. Freeman, Ph.D. '08, LL.D. (hon.) '48, has completed the third and fourth volumes of his monumental biography of George Washington. It was published this fall by Charles Scribner's Sons. The photograph shows Dr. Freeman in the garden of Westbourne, his home in Richmond, Virginia, as he was about to begin a morning's work last summer.

George Burton Gilbert, M.D. '08, April 6.

Henry Joseph Goudreau, g. '19–'20 (Chem.), April 4.

William Garland Gressitt, '16–'18 (Engr.), April 14.

Fletcher Orpin Henderson, g. '32–'38 (Engl.), November 16, 1950.

Frank Philip Hiner, g. '23–'24, August 9.

J. Edward Johnston, trustee of the Johns Hopkins Hospital, October 17.

Marion G. Keiser, '25 (Nurs.), March 21.

Paul Henry Land, g. '94–'97, fel. '97–'99 (Sem.), September 19.

Henry Marshall Lankford, M.D. '05, September 8.

Charles F. McCombs, g. '11–'12 (Rom. Lang.), May 19, 1947.

Alexander Douglas McConachie, g. '90–'91 (Histol.), September 21.

Clarence Adolph Neymann, fac. '16–'19, January 11.

Charles Lane Poor, Ph.D. '91 (Ast.) fac. '91–'99, September 27.

Horace Mann Powell, Jr., M.D. '49, January 13.

Mary Elkins Reed, '07 (Nurs.), April 16.

Elizabeth Brewer Richards, '04 (Nurs.), March 4.

Josephine Dieter Smith (Mrs. Edwin R.), '13 (Nurs.), March 24.

Raymond Roscoe Squier, M.D. '26, fac. '27–'30, September 17.

Margaret Platt Tousey, '08 (Nurs.), April 12.

Frances Crary Wells (Mrs. George S.), '44 (Nurs.), March 8.

Carol Van Buren Wight, B.A. '09, M.A. '21, Ph.D. '22 (Lat.), fac. '22–'29, September 9.

Lester L. Williams, C.P.H. '25 (M.P.H. '39), August 2.

BOOKS BY HOPKINS MEN

Floyd B. Clark, Ph.D. '14 (Pol. Sci.) *A Handbook for an International Monetary System.*

Douglas Southall Freeman, Ph.D. '08 (Hist.), LL.D. (hon.) '48: *George Washington: A Biography*, vols. 3 and 4.

Rockwell D. Hunt, Ph.D. '95 (Hist.): *California's Stately Hall of Fame;* and *History of the College of the Pacific.*

Klare S. Markley, Ph.D. '29 (Chem.): *Soybeans and Soybean Products*, vol. 2.

Francis D. Murnaghan, Ph.D. '16 (Math.)., fac. '18–'48: *Finite Deformation of an Elastic Solid.*

Glen Levin Swiggett, g. '89–'90, '92–'93 (Ger.): *Spiritual Sonnets.*

THE ALUMNI

The late Ira Remsen, professor of chemistry '76–'13, president '01–'13, emeritus '13–'27, has been honored in the naming of a building at the new Queens College, New York. The first unit in the college's building program, Ira Remsen Hall, will house the departments of chemistry, psychology, and home economics.

Florence Sabin, M.D. '00, fac. '02–'25, has been given one of the 1951 Lasker Awards, the top honors presented by the American Public Health Association. She was also awarded a certificate of National Honorary Membership by Iota Sigma Pi, women's national honor society in chemistry.

Oliver B. Hopkins, B.A. '09, Ph.D. '12 (Geol.), has resigned as director of Imperial Oil and as president of the Interprovincial Pipe Line Co. in order to devote more time to service with the Canadian government.

Harry Christian Schmeisser, B.A. '08, M.D. '12, Ph.D. '14 (Pathol.), fac. '14–'19, was honored recently in ceremonies accompanying the presentation of a portrait of Dr. Schmeisser to the University of Tennessee Medical Units, on whose faculty he had been professor of pathology and bacteriology for thirty years.

J. Samuel Guy, Ph.D. '11 (Chem.), fac. '11–'13, has been honored by the Georgia section of the American Chemi-

cal Society "in recognition of his many years of distinguished service to chemistry and chemical education in the South."

Amos F. Hutchins, M.D. '13, fac. '23–30, '34–'48, has been named vice chairman of the board of visitors and governors of St. John's College, Annapolis.

Parker C. Williams, B.A. '23, has been named chairman of the Regional Wage Stabilization Board, covering Ohio and Kentucky.

C. Howard Black, B.E. '24, has been appointed general manager of the General Electric Company's Meter and Instrument Department at Lynn, Massachusetts.

Ernest A. Strathmann, B.A. '26, M.A. '28, Ph.D. '30, fac. '30–'32, has been appointed visiting professor of English at the University of Rochester.

S. W. Britton, fac. '26–'28, has been appointed visiting professor of endocrinology at the University of Nigeria.

Arthur E. Gordon, Ph.D. '29 (Lat.), has been promoted to professor of Latin at the University of California in Berkeley.

Elsa Orent-Keiles, Sc.D. in Hyg. '30, g. '30–'32, fac. '32–'40, was head of the Vitamin-A Research Unit of the Bureau of Human Nutrition and Home Economics, which recently received the Distinguished Service Award from the U. S. Department of Agriculture. She has since been transferred to the Division of Research Grants and Fellowships, National Institutes of Health.

James E. Perkins, M.P.H. '31, Dr.P.H. '33, has been presented with an Outstanding Achievement Award medal by the University of Minnesota.

George T. Moody, Ph.D. '32 (Rom. Lang.). has been made attaché in the American Embassy in Paris.

Frank L. Roberts, Dr.P.H. '36, has been awarded a plaque by the West Tennessee Public Health Co-Workers Council for his contributions to public health.

Mack I. Shanholtz, M.P.H. '38, has been named head of the Virginia department of health.

Tze-Tuan Chen, g. '36–'39, fac. '39–'40, has been promoted from associate professor to professor of zoology at the University of Southern California.

Robert O. Jones, fac. '39–'41, has been elected president of the Canadian Psychiatric Association.

Alfred Agrin, B.A. '40, will be the first director of the new Child Guidance Clinic in Atlanta.

Harrison S. Brown, Ph.D. '41 (Chem.). fac. '41–'42, has received the

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American Chemical Society's Award in Pure Chemistry.

Raymond Laird, Sc.D. in Hyg. '42, has resigned as associate professor of preventive medicine at the University of Tennessee Medical Units to become chief consultant on malaria control in Burma for ECA.

Paulo C. A. Antunes, M.P.H. '42 Dr.P.H. '43, g. '43–'44, has been appointed assistant director of the Pan American Sanitary Bureau. He is on leave of absence from the School of Hygiene and Public Health of the University of São Paulo, where he is dean.

Mark Nickerson, Ph.D. '44 (Biol.), has been appointed associate professor of pharmacology at the University of Michigan Medical School.

James Otis Elam, M.D. '45, has been appointed assistant professor of surgery at Washington University.

Frederick G. Germuth, Jr., B.A. '42, M.D. '45, fac. '45–'48, been made assistant professor of pathology at Washington University.

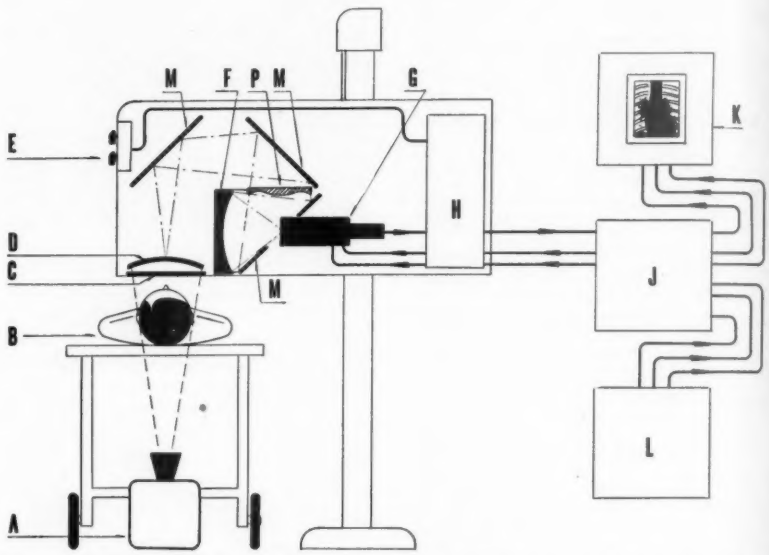
Thomas M. Donahue, Ph.D. '48 (Phys.), has been appointed assistant professor of physics at the University of Pittsburgh.

Motion Pictures By X-Ray

Continued from page 17

techniques of radiology to advanced students and physicians.

Dr. Morgan's movies will be extremely helpful in medical education. In cases where medical schools do not have the new intensifier and therefore cannot use direct projection, movies can be used to accomplish the same teaching. As in all things recorded on film, they have the advantage of being permanent and compact for storage. And they have a particular advantage in that rare diseases or abnormalities, occurring so infrequently that only an occasional medical-school class formerly would be able to examine them during training, can now be recorded and shown to all students. Films made at an institution like the Johns Hopkins Hospital, where a large variety of such cases are received, can be duplicated and sent to smaller institutions.



THE PARTS AND OPERATION of Dr. R. H. Morgan's new screen intensifier are shown in the schematic drawing above: A—fluoroscopic x-ray generator; B—patient under examination; C—wafer grid; D—fluoroscopic screen; E—intensifier controls; M—plane mirrors; P—corrector plate of Schmidt optical system; F—spherical mirror of Schmidt optical system; G—image orthicon; H—preamplifier; J—final amplifier; K—viewing unit; L—pulse-former for generating electrical pulses which sweep the electron beams of the image orthicon and kinescope in synchrony with one another.

In the third field, diagnosis, the new bright x-ray is not expected to play so large a part. The considerable expense involved in building and operating it is certain to limit it to relatively large institutions. Further, for most diagnostic cases either the standard x-ray or the fluoroscope is sufficient to tell the doctor what he needs to know. It should not be inferred that the intensifier makes obsolete x-ray's familiar single photograph; it is so much easier to look at a single picture in front of a viewing screen than to set up all the equipment needed for movie-projecting that, where possible, the physician will certainly continue to use the single photograph most extensively.

There will probably be, however, some diagnostic cases where the new intensifier will offer sufficiently better results to warrant its use. Dr. Morgan recently heard from a physician who has treated an asthmatic patient whose diaphragm had, after years of gasping for breath, been lowered out of its normal position. The physician has wanted to make a film record of the present breathing action to see whether the cure has been effective. The time limit on standard x-ray motion pictures is three seconds, and a single motion of the diaphragm takes four seconds; obviously the old-type movie would be useless. The physician has been inquiring into Dr. Morgan's film work in the hope that the new method, with its extended time allowance, can make the desired record. Such work is now only in the first experimental stages, but it is hoped that in time such records will prove feasible.

The potential flexibility of the new device should also prove helpful, although this is another of the possibilities which is not yet accomplished in terms of clinical usability. The size of the screen can be conveniently large. Contrast controls in the amplifying system can be regulated to raise the low contrast typical of fluoroscopy to the high-contrast level of x-ray. Further, a phasing switch allows the radiologist to use either a negative image (which one gets in x-ray) or a positive image (which is typical of the fluoroscope). He can thus select the type of image which proves most satisfactory for each particular examination.

One particularly dramatic use has been tested for the new device. It has proved possible to put x-ray examinations on a television cable which, in the case of a particularly difficult problem, would make possible a conference between radiologists in different cities. A trial run was actually made last year in a television show of the *Johns Hopkins Science Review*, when experts in Chicago

and New York sat in on a rehearsed examination being made in Baltimore. But like the ballyhooed idea of teaching surgery by television, this has its obviously impractical side, and it is doubtful that it will be carried out on any sizable scale in the near future.

It may be, however, that TV instruments can be profitably used in other medical work besides radiology. An adaptation similar to that Dr. Morgan has made in the electron fluoroscope might, for example, be used in microscopy. It is difficult for researchers to make motion pictures of cell actions because the strong lights normally needed for the photography are likely to damage the cells. An intensifier akin to Dr. Morgan's might prove helpful, allowing a dimming of lights comparable to the reduction in x-ray radiation. Other physical and chemical studies may be able to take advantage of the ability of television equipment to detect ultraviolet light and convert it into visible light.

THE electron fluoroscope is not yet ready for general manufacture. It is complicated and clumsy and subject to all the troubles typical of newly-developed machines. It must be simplified and its performance improved before Dr. Morgan can pronounce it ready for general use. How long this will take he does not estimate, for research has rarely been known to proceed evenly on a time schedule. The intensifier does work, however; that was the big question. The further details are chiefly a matter of time and testing.

SAIS: Hopkins In Washington

Continued from page 23

from eighteen nations who hold SAIS degrees have to date exhibited a surprising devotion to the School itself, even though they are scattered around the world in such way-stations as Moscow, Tabriz, Bahia, Rangoon, Prague. To be sure, a heavy concentration remains in Washington, at work for various government offices. These "old grads" of less than a decade turn out for luncheons, lectures, and particularly for informal parties given to acclimate incoming students. (From last June onward, incidentally, all new graduates are considered Johns Hopkins alumni; but SAIS continues to publish its own *Alumni Review*.)

A WEEK has in it more than eighty hours, so the parties do occur. One of the things that flow is talk: everything from job tips (it is advisable to take the Civil Service exams, even if only *pour le sport*) to courses (only two half-year courses on Russia are being offered this year) to summer school (SAIS used to move to Peterborough, New Hampshire every hot season, but now the session is held in Washington) to professors (hear about the prominent faculty member who exhorted his students to jazz up their reading speeds?: claimed he personally cruises along at 185 pages an hour, though he has only one eye!).

THE night after any such party, lights in the dormitory at 1906 Florida Avenue are likely to be burning later than usual, even when there is no exam the next day. All graduate students, everywhere, are self-committed prisoners at hard labor; but at SAIS it is hard not to have a downright sense of mission about it.

The result? Not long back, Joseph C. Grew declared: "The School's graduates represent the best that America can contribute to international friendship and mutually helpful cooperation."

And Thomas B. McCabe, while chairman of the Board of Governors of the Federal Reserve System, said: "The School is making a significant contribution to helping our entire country realize its opportunities and discharge its responsibilities of leadership in international affairs."

Robert A. Lovett, Secretary of Defense, has this to say: "I have come into contact with the School of Advanced International Studies during the past few years, and I am very much impressed . . ."

Little over a year has passed since, as a writer in SAIS' *Alumni Review* put it, "the cumbersome title, *The School of Advanced International Studies*, has been changed to an impossible mouthful, *The School of Advanced International Studies of the Johns Hopkins University*." But already, in that short time, the benefit to both organizations has been recognizably great—and it's growing.

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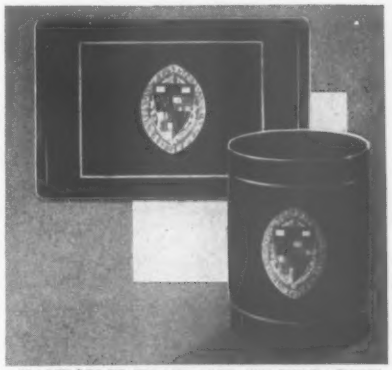

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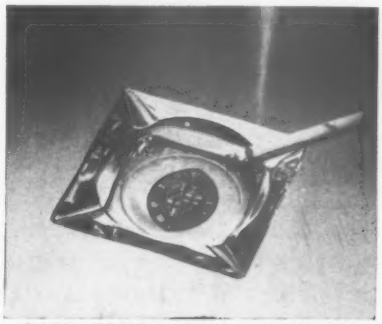

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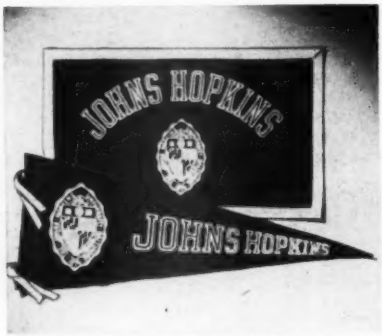

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Today—Why Read The Classics?

Continued from page 4

his future work or profession. To a large extent, this further education will be a matter of reading the books in which man and his relations to the divine and natural elements which surround him have been interpreted and illuminated by men of extraordinary perception and ability. There is not a facet of man's innumerable activities which has not been placed in a clearer light by the great poets, philosophers, and historians who have viewed the scene of life with a more penetrating vision than most of us possess. The vision, moreover, is expressed in a manner that is cogent, beautiful, and memorable; or, to put it more succinctly, with literary art. The combination delights while instructing.

But these works of literature and thought, or at least a great many of them, do not yield their finest benefits except insofar as the reader has the skill —and will make the effort—to understand them. Most of them were written in the past, and reflect something of the intellectual climate and the historical conditions of the period in which they were written. Every great work of genius is particular as well as universal. But the untrained mind may not be able readily to discern the universal under the trappings of the particular.

College courses, properly conducted, in literature, philosophy, and history can equip the student to enjoy and profit by the reading of great books which will be his university after the termination of his formal education. In them, techniques can be given: the ability to read a foreign language so that its literature is available at first hand; an acquaintance with the logical process and what the philosopher has been trying to do since the time of Plato and Aristotle, and how to follow him in the doing of it; what history is, beyond a collection of dates or events, and how the historian goes about transforming his raw material into history. At the same time, not only a willingness to learn, but an enthusiasm to reach the wisdom which lies beyond, can be fostered.

But courses, as we know, which by their nature should give the things which I have been discussing, are increasingly neglected. And here I return to the common concept of a scientific age. It would not be fair to make it alone the whipping boy and the sole cause of prevailing conditions. There are always many reasons for a given state of affairs. But I cannot help thinking that this common concept, blurred and inexact as it may be in the mind of the layman, has played no small part in the decline of humanistic studies, including the ancient classics.

In its crudest form, the attitude is put in the form of a question: "Why, in an age of science, should I study all this old, non-scientific stuff?"; or "What has it got that is of any use in a modern, scientific age?" The implication seems to be that we have become so transformed by scientific progress that we have nothing more to learn from man's long experience in a non-scientific past, and that somehow a knowledge of science, or some small part of it, is an advantageous substitute for the best that man has thought and recorded about himself and his position in the universe *sub specie aeternitatis*. It is an attitude which renounces all but the immediate

past as a legacy of little value, or at least of so little value that it is not worth making the effort to learn to appreciate it. It is an attitude which denies in its essence the continuity of our culture and civilization and which assumes a break of such size and thoroughness as has never been attested before. It represents, if I may use the word, a kind of provincialism in time; and it is pathetically fallacious.

I beg the reader at this point not to interpret my words as an attack on the sciences or on true scientific method. As a non-scientist, I feel that it is of the highest importance that the average

educated layman should know the things about the development of scientific thought and method which President Conant of Harvard, for one, believes we should know. But these things, I submit, are not enough for our mental and moral development. Our institutions of learning and ourselves cannot shirk the task of making our education as complete as our capacities permit, during not only the period of formal training but the years thereafter. We cannot justify our neglect by associating ourselves emotionally or by catch-word with an intellectual stream to which we are not contributing; by confusing the part played by mechanics in our daily existence with a philosophy of living; or by thinking ourselves profoundly different from those who have gone before us.

To what, then, shall we turn for our education? In an essay entitled "Why Study the Classics in this Busy World?" Professor G. M. A. Grube has pointed out that from the fall of Cretan civilization around 1400 B.C. to the fall of Constantinople at the end of the fifteenth century A.D. "lie three thousand years of European history, during the major part of which any civilization that existed in Europe was Greek or Roman, and during all of which Latin and Greek were the only major languages, the only languages through which European culture expressed itself."

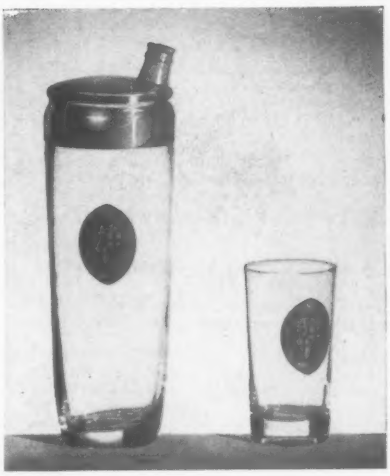
This statement should give us pause. The period in question was not one in which mankind progressed slowly and painfully from one crude tool to one less crude and thus better satisfied his animal wants and desires. It was a period which saw the birth of speculation and investigation in regard to natural, ethical, and social phenomena; the formation of political institutions which are still in use today; and the creation of the fundamental artistic forms of western civilization. In this period, Christianity arose and asserted itself as the dominating religious ideal of the western world. It would be wrong to call this classical antiquity the childhood of our civilization, unless we believe that children can bring poetry, law, architecture, philosophy, and political administration up to levels which at their highest have rarely been surpassed or equalled.

Moreover, it can be maintained that there is a greater affinity between the Periclean Athenian or the Augustan Roman and ourselves than there would be between ourselves and the European of, say, the ninth century A.D. In certain attitudes and ways of thinking these ancients had an idiom which we would recognize as not too distant from our own. They were aware of many of the problems with which we are struggling today, and they too were attempting to solve them. Can we afford to ignore their successes and their failures because they took place some time ago? Should we not add what they discovered about man, in all his greatness and pettiness, to what we can learn from other sources?

It should be clear by now that in speaking of the ancient classics I have literature, philosophy, and historical writings in mind; Sophocles as well as Plato, Thucydides as well as Vergil. The languages in which they were written are not easy to master today. The same man expending the same amount of mental effort progresses far more rapidly in learning to read Spanish than ancient Greek. In the latter, he has much more to learn in words and forms; and the genius of the language, the manner in which it was constructed and felt, seems alien and unnecessarily difficult. The same is true of Latin. Hence, a person who is not planning to become a classical scholar, or a scholar in any field in which Greek or Latin is indispensable as a tool, has every right to ask if he will be duly rewarded for the time and effort he will have to spend in acquiring a reading knowledge of one or both. After all, there are good translations.

It seems to me that in the heat of "defending the classics," some of my colleagues have not been entirely fair in their answers. To make the blanket statement that a great literary work is not worth reading except in the original is patently not so. If it is truly great, some part of its greatness will be preserved in a new medium. The amount that can be transferred will vary greatly according to the nature of the work in question. Lyric poetry loses the most, an historical account the least. The greatness of Homer can be caught to a remarkable extent in a good English prose version. I have yet to see, on the other hand, a satisfactory English translation of Vergil in verse or prose.

But it stands to reason that all Greek literature is *better* read in Greek, and all Latin literature is *better* read in Latin. The subtleties, the rhythms, colors, and connotations were within the language which the writer was using, and it was his genius for it which brought them out. In poetic or conceptual value, a word



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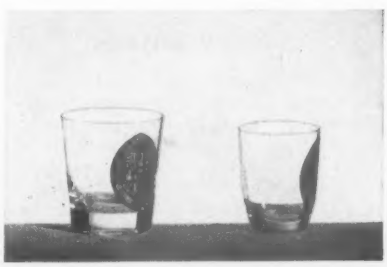

THE MONTH
at Johns Hopkins

A calendar of events: November 20–December 31

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HOLIDAYS

THANKSGIVING—The University will be closed on Thurs., Nov. 22.

CHRISTMAS—Classes will be recessed from Thurs., Dec. 20 through Wed., Jan. 2. Offices will be closed on Mon. and Tues., Dec. 24 and 25.

ALUMNI MEETINGS

MODERN LANGUAGE ALUMNI—A Johns Hopkins Hour will be held on Thurs., Dec. 27 in conjunction with the national meeting of the Modern Language Association in Detroit. Alumni of modern-language departments will receive details of time and place.

MEDICAL ALUMNI—A Johns Hopkins party will be held in conjunction with the meeting of the American Medical Association in Los Angeles in December. Alumni of the School of Medicine will receive details of time and place.

NOTE—Information about Johns Hopkins alumni organizations from coast to coast and overseas may be obtained by writing to the Director of Alumni Relations, the Johns Hopkins University, Baltimore 18, Md.

MEDICAL MEETINGS

The Johns Hopkins Medical Society—Wed., Dec. 12, at Hurd Hall, the Johns Hopkins Medical Institutions.

East Coast Orthopedic Specialists will meet at the Johns Hopkins Medical Institutions on Fri., Nov. 30.

VARSITY SPORTS

NOTE—No admission fee is charged at any Johns Hopkins home athletic events. Persons who wish to attend Hopkins games during the 1951–1952 University year may obtain a free season ticket by sending a stamped, self-addressed envelope to the Department of Physical Education and Athletics, the Johns Hopkins University, Baltimore 18, Md. Alumni should address their requests to the Alumni Relations Office, the Johns Hopkins University, Baltimore 18, Md.

JHU Illustrations

BASKETBALL—Johns Hopkins vs. Swarthmore, Tues., Dec. 11 (away); Delaware, Thurs., Dec. 13 (away); Princeton, Sat., Dec. 15 (away); Rutgers, Tues., Dec. 18 (Homewood, 8:45 p.m.); Johns Hopkins Freshman vs. Junior Varsity, Tues., Dec. 18, (Homewood, 7:00 p.m.).

WRESTLING—Johns Hopkins vs. Virginia, Fri., Dec. 14 (away).

DRAMA

ALI BABA AND THE FORTY THIEVES—Children's Educational Theater. Sat., Dec. 1, Baltimore Museum of Art; curtain 10:30 a.m. and 3:00 p.m. Single admission: children $.35, adults $.80. Subscription price for the four plays of the Children's Educational Theater season: children $1.20, adults $3.00. Tickets may be obtained from the Children's Educational Theater, Johns Hopkins University, Baltimore 18, Md.; or from the Bonney Concert Bureau, 327 N. Charles St., Baltimore 1, Md.

THE FREE THEATER MOVEMENT IN GERMANY—Ernst Feise, Johns Hopkins professor of German. With selected plays. Mon., Dec. 10, Levering Hall; 8:30 p.m. A Drama Evening sponsored by the Johns Hopkins Playshop. Single admission $.60.

COMING EVENTS

FROM YEATS TO O'CASEY—Francis J. Thompson. Mon., Jan. 21, Levering Hall. With selected plays. A Drama Evening sponsored by the Johns Hopkins Playshop.

HALSTED CENTENNIAL—Events marking the one hundredth anniversary of the birth of William S. Halsted, first professor of surgery at Johns Hopkins. Meetings in Hurd Hall on Wed. and Thurs., Feb. 6 and 7, under the auspices of the Society of Clinical Surgery. Centennial Dinner, evening of Thurs., Feb. 7. Meetings in Hurd Hall on Fri. and Sat., Feb. 8 and 9, under the auspices of the Society of University Surgeons.

ALUMNI EVENTS—Electrical engineers will hold a Hopkins Hour in conjunction with the national meeting of the American Institute of Electrical Engineers in January; the Annual Alumni Dinner and election of officers will be held in Baltimore on Thurs., Feb. 21.

COMMEMORATION DAY—Fri., Feb. 22.

may not have a precise equivalent in another tongue. It may be represented, but not completely.

It is generally agreed that the best in Greek literature is very great indeed in content and form. If it can be enjoyed at its best at the expense of some time and effort, then it would seem worthwhile to learn to read Greek. But the lack of occasion or will to master the technique of a difficult foreign tongue should not be allowed to cut one off from the vast source of education, in the highest sense, which lies in the recorded experience of our classical ancestors. We need not believe, with many a fifth-century Athenian, that the epics of Homer contain all the ethical wisdom and the practical knowledge which a man needs. But it is difficult to find a poet who knew more about human beings or put what he knew more beautifully. The problem of right living, which is always with us, is still illuminated by Plato, and Roman law stands as a foundation-stone of western social order.

In translation or in the original languages, these are things that we may not ignore with impunity. And what I have said about Greek and Latin, and Athens and Rome, is equally applicable to the modern European languages and the culture of post-classical Europe. The machine has not made us very different as human beings from our ancestors. We are subject to the same passions and make the same mistakes. We speak of being scientific and find ourselves as hopelessly caught in meshes of our own making as did our distant forebears. We create instruments of unparalleled destruction and do not know where to hide when they are turned against us. And there is no place to hide physically.

But, from the past, there are the countless examples of men, both real and imagined, who kept their heads and called their souls their own. Who had faith in the exercise of reason and the virtue of courage. Who fought against overwhelming odds and were not overwhelmed. Who were heartsick at what they saw around them and still would not sell their integrity for some moments of counterfeit peace or material well-being. They were as they were partly because they or their creators had had the benefit of past examples and past experience preserved for them by poets, philosophers, and historians, the same men whose works survive to educate us as human beings in human affairs today.

Robert M. Mottar

NEXT MONTH

A great hospital never sleeps. The visitors may depart; the lights in the wards and the corridors and the private rooms may be dimmed. But at night as in the daytime, the life-saving work of the hospital goes on. Next month, The Johns Hopkins Magazine spends a night at the Hopkins Hospital; reports, in pictures, the quietly dramatic night activities which most visitors and patients never see: the unending work in the busy accident room; the birth of a baby at 3 a.m.; the emergency operations; the nurses and doctors who answer the needs of patients all night long. Look for it, with photographs by Robert M. Mottar, in the January issue of

THE JOHNS HOPKINS MAGAZINE

HOMEWOOD HOUSE AT JOHNS HOPKINS

What price freedom? Today more than ever, there is a realization among free men that no price tag can express the value of their liberty; that to have a part in strengthening that liberty, through the free institutions which make it strong, is a privilege every man can well afford.

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